Get to know BIOLOGY

There has never been a more exciting time to study Biology, with subjects ranging as broadly as climate change and the conservation of biodiversity, the origin and evolution of life, the form and function of organisms, and the ongoing “omics” revolution at the molecular level. Our program emphasizes interactive learning with hands-on laboratories, small senior seminar modules and field courses. Our department also offers opportunities for field study around the globe — from Argentina to Africa.

New to Biology is the Biotechnology program that works with living organisms and other biological systems to help us improve our lives by discovering new drugs, improving crop production, and helping to develop novel forms of sustainable energy. Recognizing the interdisciplinary nature of biotechnology, the program will encourage students to take courses from several departments at Queen’s, everything from law to civil engineering to biomechanical and molecular sciences. There is also an option to combine this degree with a diploma in Biotechnology from St. Lawrence College.

Degree OPTIONS

Bachelor of Science (Honours)
- Major / Minor / Specializations in Biology, Biotechnology, Biology and Mathematics, Biology and Psychology,
- Environmental Biology
- Bachelor of Science (General)
- Bachelor of Arts (General)
- Internship option available

Queen’s ADMISSION

Students apply to Queen’s Science (QS) through the OUAC (Ontario Universities Application Centre) website (ouac.on.ca). Secondary School prerequisites include English 4U, Advanced Functions 4U, Calculus and Vectors 4U, plus two of Physics 4U, Chemistry 4U or Biology 4U.

A Common START

Students in our Faculty are admitted into Arts, Science or Computing but the focus is on a common first year. Through self-exploration, and while you settle into university life, you have the opportunity to work with our advisors and faculty to discover your real interests and identify opportunities for success. Sometimes that discovery happens fairly quickly, and for other students it takes some work and time before the “ah-ha!” happens – either way your first year at Queen’s will be a great experience.

Course HIGHLIGHTS

The courses in Biology are very diverse from Ecology and Evolution, Animal and Plant Physiology to Biotechnology. Those interested in understanding biology at the cellular level can choose courses in Cell Biology, Genetics, Comparative Biochemistry and Analytical Genomics. If understanding whole ecosystems is your interest, we have courses in Population and Evolutionary Ecology, Conservation Genetics, Limnology and Aquatic Ecology and several field courses in Canada and abroad. If you are primarily interested in more human focused topics we have Human Genetics and Evolution, Plants for People, Evolution and Human Affairs, and Evolutionary Medicine.

That is a degree from Queen’s.
quartsci.com
2016 - 2017
Biology MAJOR MAP
BACHELOR OF SCIENCE (HONOURS) (SPECIALIZATION, MAJOR, MINOR) | BACHELOR OF SCIENCE (GENERAL) | BACHELOR OF ARTS (HONOURS) (MINOR) | BACHELOR OF ARTS (GENERAL)

1ST YEAR
In first year take BIOL 102, 103, CHEM 112 and MATH 120 or 121. Interested in the Biology and Psychology Specialization? Take PSYC 100. Interested in the Biology and Mathematics Specialization? Take MATH 110 or 111.
Each Science Plan will have several required first-year courses, including minors. For details see the Arts and Science Academic Calendar.

2ND YEAR
In second year you can enroll in the Biology Honours Plan or one of our three specialized plans (Biology and Psychology, Biology and Mathematics or Biotechnology). Core courses such as Diversity of Life, Genetics, and Biostatistics lay the foundation for 3rd and 4th year. Please see the Academic Calendar to ensure you are taking the correct courses.
Want to enhance your degree? Consider a certificate in Academic Writing or explore other certificates available.

3RD YEAR
In third year take core courses in Ecology (BIOL 302 or BIOL 303), Physiology (BIOL 341 or BIOL 339), and Cell Biology (BIOL 336). You can focus your study into thematic areas; view suggested courses on the Department website. Check out our field courses (BIOL 307, 308, 317 and 327).
Need help mapping all of your core, option, supporting and elective courses (including those not listed above) to make sure you will have what you need to complete your degree? Use the Course Mapping Tool on the Arts and Science website.

4TH OR FINAL YEAR
Thinking about graduate programs? Check out our Honours Thesis courses (BIOL 537 or BIOL 541) and Research Mentorship courses (BIOL 538-540). If you’re looking for a unique study experience, check out our Honours Seminar courses (BIOL 501-536) and 4th year labs (BIOL 401-404).
By fourth year you should be working on your remaining option and elective courses. Make sure to map your minor and / or certificate(s) as well.
Apply to graduate in SOLUS.

Where could I go after graduation?
Academic and applied research
Agricultural Sciences
Bioeconomics
Bioethics
Bioinformatics
Biomechanics
Biotechnology
Chiropractic
Community health
Dentistry
Environmental conservation
Epidemiology
Fisheries science
Food industry
Forensic science
Genetic counselling
Health administration
Marine biology
Medical research
Medical technology
Medicine
Nursing
Occupational therapy
Oceanography
Optometry
Pharmaceutical sales
Pharmacology
Physical therapy
Protection and law
Teaching
Toxicology
Veterinary medicine

To explore different careers of interest by reading books in the Career Services Information Area, such as Opportunities in Biotechnology Careers. For more information check out Career Cruising or by finding and getting help thinking about grad school from Career Services.

Some careers may require additional training.

Visit careers.queensu.ca/majormaps.html for the online version with links!
How to use this map

Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. The map just offers suggestions – you don’t have to do it all! To make your own custom map, use the My Major Map tool.

A balanced approach leads to long-term success. While you will learn a lot from your studies, taking time to get relevant experience outside of the classroom, build your network, and gain international experience, will position you to be more competitive in your job search or grad school applications.

Get started thinking about the future now – where do you want to go after your degree? Having tentative goals (like careers or grad school) while working through your degree can help with short-term decisions about courses and experiences, but also help you keep motivated for success.

Get the help you need

Queen’s provides you with a broad range of support services from your first point of contact with the university through to graduation. At Queen’s, you are never alone. We have many offices dedicated to helping you learn, think and do.

Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming living and learning environment offers the programs and services you need to be successful, both academically and personally, and Queen’s wants you to succeed! Check out the Student Affairs website for available resources.

Succeed in the workplace

What employers want

The Canadian Council of Chief Executives list the top 6 skills sought by employers as:

1. People skills
2. Communication skills
3. Problem-solving skills
4. Analytical abilities
5. Leadership skills
6. Industry-specific knowledge

Take the time to think about the unique skills you have developed at Queen’s, starting with the skills list here for ideas. Explaining your strengths with compelling examples will be important for applications to employers and further education. For help, check out the Career Services skills workshop.

What can I learn studying BIOLOGY?

- Develop knowledge of biological functions
- Use laboratory equipment and instruments
- Gain hands-on experience studying biology in the field
- Comply with quality control and safety regulations
- Collect and preserve organisms
- Design experimental studies
- Present literature and research findings in posters and seminars
- Observe and make measurements
- Write, review, and summarize reports/scientific writing
- Analyze and evaluate information
- Statistical analysis of biological data
- Solve quantitative problems